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Transforming Model to Meta Model for Knowledge Repository of Malay Intangible Culture Heritage of Malaysia

Radiah Amin*, Oras F. Baker**, Aziz Deraman***, Noor Faezah Mohd Yatim, ****
*Computer Science Department, Faculty of Information Science and Technology, National University of Malaysia
**Applied Computing and Information Technology Department, UKH University
***Computer Science Department,University Malaysia of Terengganu

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ABSTRACT

Intangible Culture Heritage is very important as national treasure for a country since it is a part of identity of the country. Rapid technology changed and globalization is one of the reasons why new generation less interested to involve in culture heritage sector. Without any drastic action to safeguard Intangible Culture Heritage for the country it will cause endanger to disappearance. In this study researcher introduce a model of factors that contributing in archiving Intangible Culture Heritage. By transform from the model to meta model it will be a guideline, standard and base for developing a repository of Intangible Culture Heritage. The finding for this research is a vital and very fruitful for intangible study and archiving and also as a main contribution for this study.

Corresponding Author:

Assoc Prof. Dr Oras F. Baker
Department of Computer Science and Engineering Departement
University of Kurdishtan – Hewller, Iraq
Email: o.baker@ukh.ac

1.   INTRODUCTION

Since Malaysia is a developing country, various factors will affect the culture heritage of Malay. Globalization, modernization, urbanization, mass media, internet access, increase of opportunities in the job markets, and various development plans taken up by the government constitute a great danger for the variety of human culture [1]. Many cultural observers around the world believed that local, regional, even national traditions were devalued or endangered or both [2, 3]. The influence of global mass culture raised the question of whether valuable traditions, practices, and forms of knowledge embedded in diverse societies would survive the next generation while young generations tend to learn new technologies such as ICT and engineering rather than get involve in culture activities where wages and profitability as a measurement. It was seem like UNESCO Convention 2003 believe that intangible cultural heritage is truly endangered [3]. Since intangible heritage is a kind of tacit knowledge, the major problem is how to archive and how to preserve things that cannot be seen and untouchable. A quite number of researcher doing research by exploited ICT to archive intangible heritage. It is exactly like Dyson statement that the development of information and communication technologies (ICTs) globalised human knowledge and it is now possible to make the whole human memory accessible, to every individual and to reproduce it exactly in different places [4].

Guoxin Tan and Danis Pitzalis proposed Ontology-Based Knowledge Modeling to archive intangible heritage via ICT. This technique introduced ontology technique using CIDOC Conceptual Reference Model to perform demographic search of intangible heritage [5, 6]. Ontology technique is used to mediate heterogeneous databases and user free defined metadata based on factual knowledge [6]. This technique very accurate and efficient in searching but in term of archiving intangible heritage, just certain type of it can be implement with, such as costume or traditional music. Another type to archiving intangible

heritage is using X3D and Virtual Reality Technique. This technique has implemented for development of Digital Museum of Intangible Heritage in China [7, 8]. Researchers altered the actors of intangible heritage including the surrounding of the heritage. For example to model the Palace Dance researcher have to model the surrounding of the dance taken places in the palace as well as the audiences, music and also the king's position when the dances performed [9, 10].

The benefit of this technique is to provide learning facilities such as step by step dance performance. Unfortunately, this technique is just suitable for certain domains of intangible heritage such as Oral Traditions And Expressions, Social Practice Rituals and Festive Events and Performing Arts. For domain of Knowledge Concerning the Nature and Craftsmanship cannot be modeled exactly due to it is a human skill. In Japan, their researcher implemented Multimodal Method for conduct dance training using robotic. Multimodal information presentation method for basic traditional dance training by introducing an image display on mobile robotic and active vibro-devices [11]. This method is consider self-learning for traditional dance and do not need mentor to teach step by steps of the traditional dances [12]. Unfortunately, this method is just suitable for only a type of dance and did not understand other type of music. The robot cannot response to another type of music since the algorithm is based on certain music only. The machine have to re-programmed to able teach another type of dances [11]. On other hand, Cheng Yang using 3Dimention Motion Picture (3D Motion Picture) to archiving Chu Dance of China. This technique is by constructing model of traditional dancer with traditional costume using 3DMotion Picture software. He used reactive behavioral engine to create the model's motion by implemented rule based behavior engine [10]. It is very suitable for sub-domain Performing Arts only and not for other intangible heritage domains due to this technique is more to display only without any purpose for transmitting.

In Malaysia, although Culture Department of the Ministry has long been in existence since 1969 under various Ministry, but it still new in above technique preservation especially for Intangible Culture Heritage [13]. None of project have been started for archiving intangible heritage especially involved with ICT technology although it has various places for archiving and storing the heritage artifacts' such as National Archive of Malaysia (ARKIB) and a few museums besides few archiving projects including restoration, conservation, and preservation of sites and landscapes.

2. RESEARCH METHOD

Research methodology for this study is devided into four stages known as Document Analysys, Construction Model, Qualitative Analysys and Development.The elaboration of each stages are as below:-

2.1 Stage 1 - Document Analysys

Input from this phase are reference books, journal including on-line journal, published or unpublish paper works and white papers, legal, policy, guide lines or law documents related to culture heritage, proceeding, theses and other type of data such as CD documentation, related audio and video. In this phase few activities were identified from the reading. They are literature study, identified researchs' domain, identified research problems, identified researchs' objective, identified researchs' contribution and also identified researchs' significance.

2.2 Stage 2 - Construction Model

The document analysis in Stage 1 was designed to gather information regarding culture heritage, related studies and scientist research from all over the world. Main task in this stage is to identify factors contributing toward archiving Intangible Culture Heritage of Malay. Six factors were identified as a finding from this stage. They are human factor, Governance factor, Legal/policy factor, Belief factor, Culture factors and also geography factor. Recognised factors that contributing towards archiving Intangible Culture Heritage as a base for the development of the Malay Intangible Culture Heritage's conseptual model. This model called IR-BUDAYA which is mean repository of intangible culture in Malay language. In this Stage 2, the main tasks are to develop interview protocol and identify the respondents of culture heritage expert to conform and collect new factors if any. Data collection should be done in this stage.

2.3 Stage 3 - Qualitative Analysys

From analysys using Nvivo software there is one additional factor collected. It is a Champion Factor that normally comprising of non-government organization (NGO). From the analysys seven factors were identified in this study and divided into two categories. They are External Factors and Intrinsic Factors.

2.3.1 External Factors

External mean outer or outside or apparent [14]. In this environment external factors mean that the factors which not related directly to the culture itself. However one or more from these factors are needed in archiving intangible culture heritage [3, 15-19] . Five factors which are Human factor, Governance factor, Geographical factor, Legal or Policy factor and Champion factor are determine as external factors which contributing toward archiving Malay intangible culture heritage of Malaysia.

2.3.2 Intrinsic Factors

Intrinsic also know as internal or inner or natural factors [14]. Two out of six identified factors are in this category. They are Belief factor and Culture factor [20]. Since Belief is also sometime known as a culture especially under the domain of Social Practice, Ritual and Festive Events such as ritual ceremonies, initiation rites or burial ceremony, hence this factor is depended on the culture it self [21-25]. In other words belief and Culture is a factor that determined wether it can be archive in Malay scenario.

2.4 Stage 4 – Development

In the development phase, activities are devided into several sub-stages. First sub-stage is to develop a model for IR-BUDAYA which is taking into account all confirmed factors that contributing in archiving Malay intangible culture heritage of Malaysia. Second sub-stage is to transfer from model to meta model of IR-BUDAYA. A meta model is an explicit specification of an abstraction toward simplication [26]. In order to define the abstraction, the meta model identifies list of relevant concepts and a list of relevant relationships between these concepts. In this study meta model are derive from a model IR-BUDAYA. The meta model is a foundation and also a guidline to develop knowledge repository of Malay intangible culture heritage of Malaysia and also as researchers references for intangible study. Overall methodology input and output for each stage, activities for every stage for this study are shown in Figure 1 as follows.
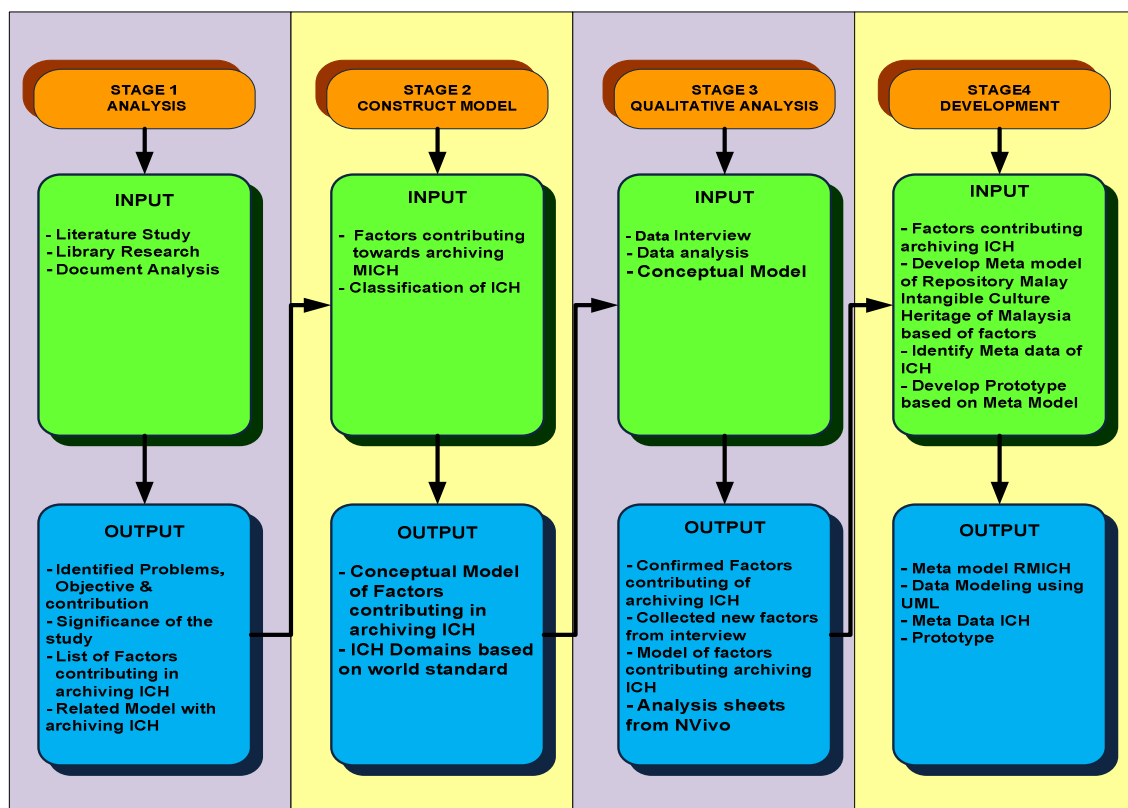

Figure 1. The methodology

3. RESULTS AND ANALYSIS

From analysys, 7 factors were identified to develop IR-BUDAYA. Refferences and factos are shown in Table 1 as follows.

Table 1. Factors for IR-BUDAYA and references

Number	Factor	References
1	Human	[27]; [17]; [15]; [19]; [28]; [13]; [16]; .[3];[29]
2	Governance	[30]; [27]; [13]; [31]; [16]; [3]; [17]; [2, 32] ; [33]
3	Legal/ Policy (including international legal)	[3]; [16]; [18]; [17]; [24] ; . [34]; [35] ; [19]; [28]; [36]
4	Believe	[17];[25] [21, 23]
5	Geographical	[27]; [18]; [19]
6	Culture	[31]; [16]; [37]
7	Champion	Interviews

From the table above all factors transform to a model which shown external and internal factor as in Diagram 2.0. After that from IR-BUDAYA model transform to IR-BUDAYA meta model. Few steps taken to develop meta model before its can be use as a guidelines to building a repository. Steps taken are as follows:
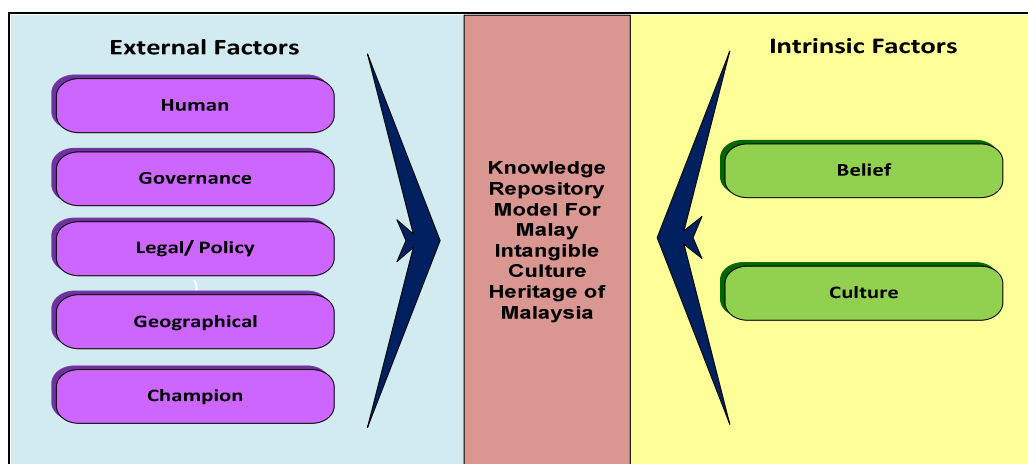

Figure 2. Model of IR-BUDAYA

From the model above, identify all activities which are related with the factors. For example, Champion support in archiving intangible culture and Governance also support the same thing. There are two activities "support" from two different factors. To make the meta model simplified and accurate omitted one of the activies and remain only one. Meaning that Champion and Governance are sharing the same activities "support" in archiving intangible culture heritage of Malay.

1. Identify different type of factors which also know as concept in meta model. For example Human factors are related with other factors such as Belief factor or Culture factor. Activities for this concept such as Human learning Culture, and Culture no objection from Belief or no objection from Culture it self. To confirm these activities Human should refer to Cultures' expert and also Belief's expert. In these scenario Culture and Belief sharing the same concept – Expert from Human factor. Another type of concept from Human factor are Community, Entreprenuer of traditional craftsmanship, Patient for Healing practices, Customer for traditional craftsmanship and Root for certain Culture.

2. Identify the parameters for each activity and also for all concepts for each factors.For example activity Patient cure by traditional healing practice, the concept is Patient and the activity is Cure. Parameters related the concepts and Intangible Culture are name of sickness, detail of sickness and Boolean for whether the patient request to be cure by traditional healing practice or not.

After all steps done, redraw the concepts and its relation between the concepts wich we call as meta model. In this study meta model are shown in a Figure 3.
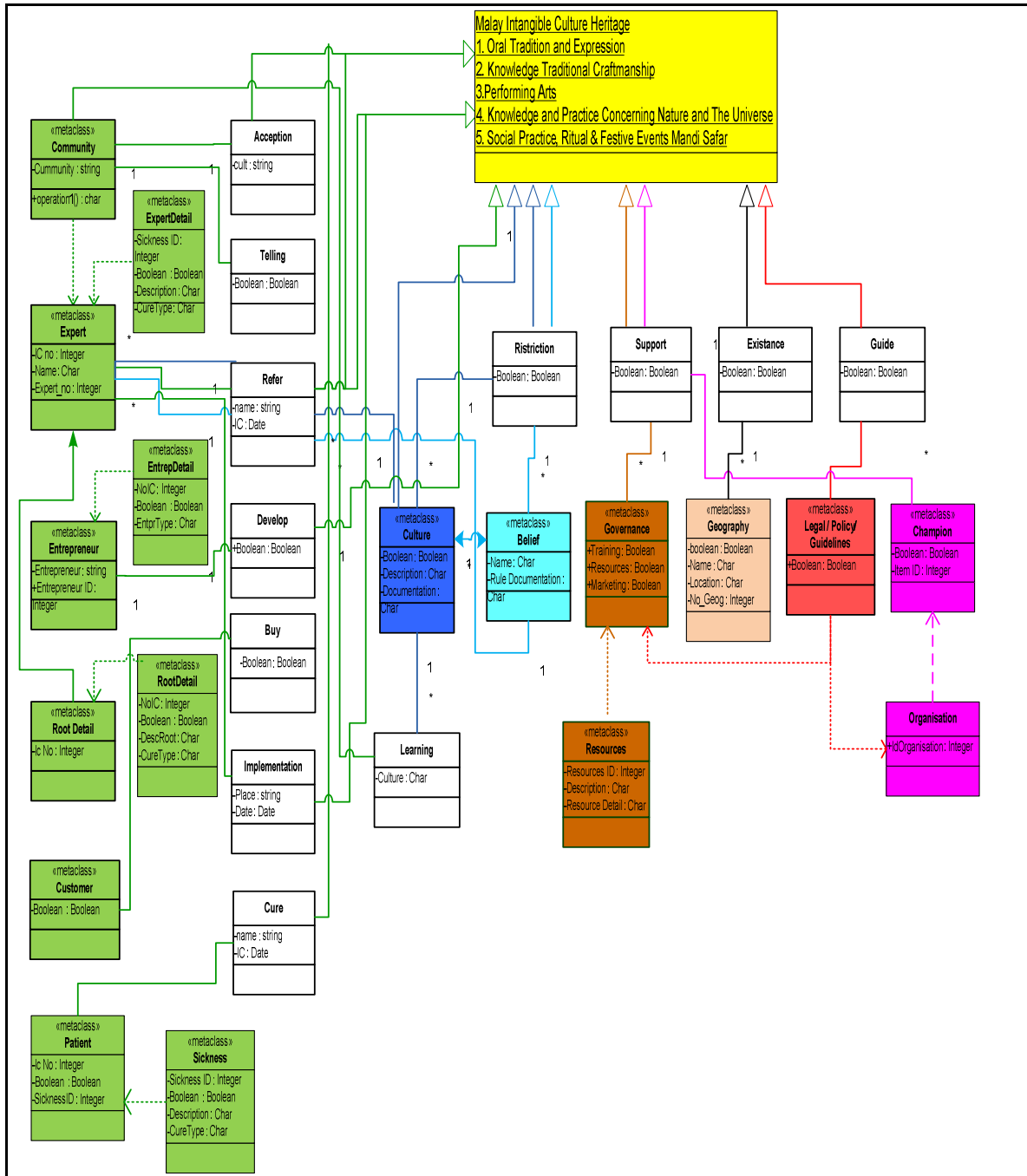
Figure 3. Meta Model for IR-BUDAYA

4. CONCLUSION

    A Knowledge Repository Model for Intangible Culture Heritage is a framework and guideline to archiving Malay Intangible Culture Heritage in Malaysia. There are two types to archive intangible culture heritage. The first one consists of transforming the intangible into tangible and preserves it for future generations in a field format, without losing its original essence. The second one is to keep the intangible alive in its original context and transmit it to the future generations through oral traditions [30, 38]. In this research technique preservation of Intangible Culture Heritage is to transfer from intangible to tangible form and make it available in digital format. New approaches to develop a standard model for knowledge repository for the Malay's intangible culture heritage were introduced by this research. Hence the compilation of Intangible Malay Culture Heritage will store in a digital device where it will be easy access and refer from any places which internet can be access and make it available for other researcher and the future generation

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BIBLIOGRAPHY OF AUTHORS

Radiah Binti Amin (PhD Candidate of National University of Malaysia)

Prof Dato' Dr Aziz Bin Deraman. Vice Chanselor University Malaysia of Terengganu

Dr Noor Faezah Binti Mohd Yatim. Senior Lecturer of National University of Malaysia

Assoc Prof. Dr Oras F. Baker. *Department of Applied Computing and I.T*
University of Kurdishtan – Hewller, Iraq. *Email: o.baker@ukh.ac*